

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An optical fiber having at least one Bragg grating, the fiber comprising a core surrounded in succession by a cladding and a coating, said fiber being obtained by writing said grating directly in at least one of the core and ~~for~~ the cladding through the coating ~~which wherein the coating is made of a material containing comprising an organic substance that is substantially transparent to the ultraviolet radiation used for writing said grating, wherein the material of said coating contains and~~ an inorganic substance that is not miscible with the organic substance and that is distributed in a substantially uniform manner in said material.

2. (currently amended): ~~An~~ The optical fiber having at least one Bragg grating according to claim 1, in which the inorganic substance is selected from a mineral filler~~[[,]]~~ and a reinforcing agent, ~~and preferably contains particles of mean grain size smaller than one-twentieth the wavelength of said radiation used for writing.~~

3. (currently amended): ~~An~~ The optical fiber having at least one Bragg grating according to claim 1, in which the inorganic substance is silica, ~~preferably pyrogenic silica.~~

4. (currently amended): ~~An~~The optical fiber having at least one Bragg grating according to claim 1, in which said coating material comprises up to 30% by weight of the inorganic substance, ~~and when the organic substance contains silicone, the material comprises 1.2% to 5% by weight of the inorganic substance and preferably about 2.75%.~~

5. (currently amended): ~~An~~The optical fiber having at least one Bragg grating according to claim 1, in which the Bragg grating presents contrast of 7.4×10^{-4} for a grating of length 1 mm and contrast of 2.3×10^{-4} for a grating of length 5 mm.

6. (original): An optical device incorporating a fiber having a Bragg grating as defined in any one of claims 1 to 5.

7. (currently amended): A method of manufacturing an optical fiber having at least one Bragg grating, the fiber comprising a core surrounded successively by a cladding and by a coating, said fiber being obtained by writing said grating directly in one or both of the core and/or and the cladding through the coating, ~~which wherein the coating is made out of a material containing~~ comprising an organic substance that is substantially transparent to the ultraviolet type radiation used for writing said grating, and an inorganic substance that is not miscible with the organic substance and that is distributed in a substantially uniform manner in said material, said method ~~including~~ comprising a step of forming said coating on the cladding and a step of writing said grating in at least one of the core ~~and/or~~ the cladding through said

coating by using a source of writing radiation, in which the step of forming the coating comprises:

- preparing a settable mixture containing said inorganic substance and a liquid organic substance ~~containing which comprises~~ at least one polymer precursor that is settable;
- applying the settable mixture on said cladding as a single layer; and
- causing the settable mixture to set so as to form said material.

8. (currently amended): ~~A~~The method of manufacturing an optical fiber having at least one Bragg grating according to claim 7, in which the step of writing said Bragg grating is performed statically.

9. (currently amended): A method of manufacturing an optical fiber having at least one Bragg grating, the fiber comprising a core surrounded successively by a cladding and by a coating, said fiber being obtained by writing said grating directly in one or both of the core and the cladding through the coating, wherein the coating is made of a material comprising an organic substance that is substantially transparent to ultraviolet type radiation used for writing said grating, said method comprising a step of forming said coating on the cladding and a step of writing said grating in at least one of the core and the cladding through said coating by using a source of writing radiation, in which the step of forming the coating comprises:

- preparing a settable mixture containing said inorganic substance and a liquid organic substance which comprises at least one polymer precursor that is settable;
- applying the settable mixture on said cladding as a single layer; and

- causing the settable mixture to set so as to form said material; and
wherein A method of manufacturing an optical fiber having at least one Bragg grating
according to claim 7, in which the at least one polymer precursor is selected from a
thermosetting silicone precursor ~~that is thermosetting~~ and a photosetting silicone precursor ~~that~~
~~is photosetting.~~

10. (new): The optical fiber having at least one Bragg grating according to claim 2,
wherein the inorganic substance further comprises particles of mean grain size smaller than
one-twentieth the wavelength of said radiation for writing.

11. (new): The optical fiber having at least one Bragg grating according to claim 3,
wherein the inorganic substance is pyrogenic silica.

12. (new): The optical fiber having at least one Bragg grating according to claim 1,
wherein the organic substance comprises silicone and the inorganic substance is 1.2% to 5% by
weight of the coating material.

13. (new). The optical fiber having at least one Bragg grating according to claim 12,
wherein the inorganic substance is 2.75% of the coating material.

14. (new): The method of manufacturing an optical fiber having at least one Bragg grating according to claim 7, in which the at least one polymer precursor is selected from a thermosetting silicone precursor and a photosetting silicone precursor.